midst" of climatic, geologic, and biologic history by a glaciation more severe and more incongruous than any recorded in the crust of the earth, for in Permo Carboniferous glaciation tropical latitudes were severely and destructively glaciated down to sea level, and subpolar and polar latitudes remained genial, thus reversing every principle of solar climatic distribution and control and offering "a plexus of problems of unparalleled difficulty."[3] The final transition was accomplished as Pleistocene glaciation merged in temperate and polar latitudes into existing climatic distributions.

Wide range has been given to the scientific imagination to develop solutions based upon hypotheses, assumptions and calculations resting upon assumed data, all resulting in unsatisfactory solutions of the climatic problems presented by the researches of geologists.

The last of these is Wegener's theory of floating continents. This is referred to by Dr. G. C. Simpson as follows:[4]

> There has recently been a considerable interest taken in problems connected with past climates. Wegener's revolutionary theory of the movements of the continents, associated with wanderings of the polar axis, has met with serious and strenuous opposition. One of the most important of the appeals of Wegener's theory is that it gives an explanation of the great changes of climate which geological evidence indicates to have taken place in many parts of the world.[5]
>
> This has been a direct challenge to opponents of the theory to produce explanations of these climatic changes on more conservative lines. Variations of solar radiation is the most obvious solution, but there are many patent objections to such an explanation and there seems a reluctance to postulate any but small changes in solar radiation. At any rate this is not a popular solution.
>
> Geologists look with much more favor on theories which depend only on changes in the physical status of the earth's surface; changes in the relative extent of sea and land, changes in ocean currents and changes in elevation, although the latter can only work in the direction of reducing surface temperatures.
>
> It seems to me to be the opinion of many geologists and not a few meteorologists that there is unlimited scope for the control of climate in the readjustment of land masses and the introduction of new ocean currents similar to the Gulf Stream.[6]

The "revolutionary" theory of Wegener does not appear to meet any of the rigid requirements of geologic climates as established by geologists; the crucial objections are:

(1) The floating of the continents upon a slip joint or surface discretely postulated beyond possible examination.

(2) The repeated alternation in climates during Pleistocene glaciation from severe and destructive glaciation to the geniality due the insolation in latitude calls for the floating of continental areas in both hemispheres from polar latitudes into temperate latitudes to be deglaciated and back again to polar latitudes to be reglaciated.

The same back-and-forth floatation between tropical and polar latitudes would be necessary to account for corresponding alternations in climate during Permo-Carboniferous glaciation and the floating would have to be far greater in latitude.

Moreover, the whole change is based on the unproved assumption of solar control of geologic climates, which assumption has proved unsatisfactory in all cases.

The hypothesis can not be allowed to stand as even one of the possible causes of climatic change.

[3] Chamberlin and Salisbury Geology, Vol. II, p. 655.
[4] In Past Climates, Quart. Journal Royal Mt. Soc. July 1927, pp. 213–230.
[5] W. Köppen and A. Wegener, der Klimate der Geologishen Vorzeit, Berlin, 1924.
[6] Seward Phil. Transactions B 215, 1926, p. 161, Brooks Climates through the Ages. London, 1926.

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PSYCHROMETRIC OBSERVATIONS

By Capt. M. COYECQUE, Master Steamship *Basse Terre*

Psychrometric observations have been made during the voyage from Bordeaux, France, to Pointe-á-Pitre, Guadaloupe (September 11–26, 1929), with the object of realizing when there was any opportunity and advantage to open the hatchways for ventilating the cargo outside of the regular air current obtained by the ship's ventilators. The apparatus used was the regular Richard psychrometer, placed in a sheltered position, exposed to the wind and moved according to the sun's movement and the ship's course.

The absolute humidity in grams per cubic meter has been figured from the Smithsonian tables and the specific humidity in grams per kilogram calculated by the formula

$$H_s \frac{623f}{\text{p.} - 0.377f}$$

f being the absolute humidity or vapor tension in mm. and p. the pressure in millimeters. The observations have shown along the course indicated by ship's position the following results:

In the Gulf of Biscaye with fair weather, H_s was only 12.3 grams with a temperature of 20°.5 C. It decreased continuously between Spanish coast and Azores, showing a minimum of 11.3 grams in latitude 37 and longitude 31—in the southeast sector of a high-pressure zone slowly moving east-southeastward (wind NE. 3). After that day H_s increased slowly until latitude 31 was reached. The ship then passed into tropical air from southeast, after a heavy thunderstorm moving northwestward. The specific humidity, which had increased 3 grams in three days, made a jump of 3 grams in a few hours and maintained its degree afterwards.

From 17 grams it slowly reached 21 grams on the 24th in latitude 21 with appearance of cyclonic conditions in the region. As the weather conditions improved and showed less turbulency, H_s fell down to 19 grams, and increased again to 21.9 grams close to the Guadaloupe coast, with squally weather and temperature 27°.5 C. As a rule, morning observations made about 8 a. m., local time, showed higher specific humidity than p. m. observations. Evening observations were generally intermediate and close to p. m. data.

As a conclusion, the driest part of the voyage was the period southwestward of the Azores in the polar air of the moving HIGH. All the way farther south the air was richer in moisture than the air from Bordeaux, where cargo had been loaded.